recorded as being met with in the Comoro Islands (see Ibis, 1864, p. 300); so that its existence in Madagascar also might have been anticipated.

11. Report on a Collection of Reptiles and Fishes from Palestine. By A. Günther, M.A., M.D., Ph.D., F.Z.S.

The natural history of Palestine has been very incompletely known, and there are only a very few collections in which specimens illustrating its reptiles and fishes are exhibited. Hasselquist was the first who described a fish from the Lake of Galilee; and several others from the Jordan are mentioned in Cuvier and Valencienne's 'Histoire Naturelle des Poissons.' Of reptiles only a few species of Snakes were mentioned by M. Jan in a pamphlet entitled 'Elenco sistematico degli Ofidi.'

The British Museum received first a few species from a collection made by Th. W. Beddome, Esq., who visited Palestine in 1862, and fell a victim to a malignant fever during his return. The species collected by him will be mentioned below. A magnificent collection has been formed by the Rev. H. B. Tristram; indeed we believe that it is the most ample ever brought to Europe, and that it fully illustrates the character of the fauna. Comparatively few of the species are new and apparently peculiar to Palestine, nearly all the reptiles being identical with, or closely allied to, species belonging to the Mediterranean fauna proper. Only one species (*Daboia xanthina*) reminds us of the Indian fauna. The most interesting form is the new genus of Snakes described below, the affinities of which are rather obscure.

The ichthyological part of Mr. Tristram's collection shows the affinity of the Jordan with the Nile and other rivers of tropical Africa, *Chromis* and *Hemichromis* being truly African forms, whilst nearly all the other species are identical with, or very closely allied to, fishes from the fresh waters of Syria.

List of the Species.

Those marked with an asterisk (*) are new.

Tortoises.

Testudo græca, L. Everywhere.
Emys caspica, Gm.

Saurians.

Lacerta viridis, L. Jerusalem, Merom, Mount Hermon.
L. lævis, Gray. Jerusalem, Dead Sea.
Zootoca muralis, Laur. Syria, Beyrout.
Z. deserti, Gthr. Lebanon.
**Z. tristrami*, Gthr. Lebanon.
Mesalina pardalis, Licht. Beersheba.
Pseudopus pallasii, Oppel. Mount Hermon.
Ophiomorus miliaris, Pall. Mount Hermon.
Ophiops elegans, Ménétr. Galilee, Mount Hermon.

**Seps monodactylus*, Gthr. Galilee, Merom, Mount Hermon.
Plestiodon auratus, Schn. Dead Sea.
Euprepes fellowsii, Gray. Jerusalem, Merom, Mount Hermon, Galilee, Beersheba.
Gongylus ocellatus, Forsk. Jerusalem, Dead Sea, Gilead.
Ptyodactylus gecko, Hasselq. Jerusalem, Mount Hermon, Dead Sea.
Stenodactylus guttatus, Cuv.
Gymnodactylus geckoides, Spix. Mount Carmel.
Stellio cordylina, Laur. Galilee.
Trapelus sinaita, Heyden. Dead Sea.
Chamæleon vulgaris, Daud. Merom, Galilee, Dead Sea.

Ophidians.

**Rhynchocalamus melanocephalus*, Gthr. Merom.
Ablabes coronella, Schl.† Lebanon, Merom, Galilee.
Ablabes modestus‡, Martin. Galilee, Lebanon, Mount Hermon.
Ablabes decemlineatus, D. & B. Galilee, Lebanon, Merom. This species differs constantly from *A. modestus* in having the posterior and anterior chin-shields of equal length, whilst in *A. modestus* the anterior are much longer than the posterior. Moreover it has never the black markings on the head and neck.
Zamenis dahlii, Schleg. Mount Tabor.
Z. ventrimaculatus, Gray. Dead Sea.
Z. caudolineatus§, Gthr. Jerusalem, Hiram's Tomb, Nazareth.
Z. atrovirens, Shaw. Galilee, Merom.
Var. *carbonaria*‖. Galilee, Merom.
Tropidonotus hydrus, Pall. Jerusalem, Galilee, Merom, Lake Phiala.
Tachymenis vivax, Fitz. Jerusalem, Mount Tabor.
Cœlopeltis lacertina, Wagl. Jerusalem, Galilee.
Eryx jaculus, Hasselq. Galilee.
Daboia xanthina¶, Gray. Galilee.
Vipera euphratica, Martin. Galilee.
V. ammodytes, L. Syria, Lebanon.
Echis arenicola, Boie. Dead Sea.

Batrachians.

Rana esculenta, L. Dead Sea**, Galilee, Merom, plains of Phœnicia.
Bufo pantherinus, Boie. Dead Sea**, Mount Carmel.
Hyla arborea, L. Dead Sea, Jerusalem, Wady-el-Kurn.

† *Calamaria coronella*, Schleg. This is not a true *Calamaria*, having two pairs of frontal shields. The loreal shield is small, sometimes absent; specimens without loreal have been called *Homalosoma coronelloides*, Jan.
‡ *Eirenis rothii*, Jan, is not specifically distinct.
§ All the specimens from Palestine have the scales in 25 series.
‖ Some of the specimens are entirely black, and have the eye a little smaller.
¶ *Vipera confluenta*, Cope, is very closely allied to it.
** Among the numerous specimens of *Rana esculenta* and *Bufo pantherinus* col-

Fishes.

Blennius lupulus, Bonap. This species was first discovered by Mr. Th. W. Beddome in the Lake of Galilee, and has been found again by Mr. Tristram in the Nahr el Kelb. Unfortunately I have no opportunity of comparing our specimens with examples from Italy; but they agree perfectly with the description and figure given by Bonaparte.

Chromis nilotica, Hasselq. Lake of Galilee, Dead Sea. All the specimens have D. $\frac{16}{12-13}$; A. $\frac{3}{10}$. Although Hasselquist himself distinguishes a *Sparus galilæus*, attributing to it seventeen dorsal spines, it is not improbable that he took his notes from the same species which I consider as identical with the *Chromis* of the Nile. Hasselquist evidently drew up the description of the Galilean fish in a hurried manner, and never had an opportunity of comparing it with a specimen from the Nile. It even seems as if he never thought of the affinity of these fishes, referring one to *Sparus*, the other to *Labrus*. It would be also very singular that Mr. Tristram, although collecting these fishes in great number, should not have found the only species known to Hasselquist. Yet it is not very improbable that the species seen by Hasselquist is a fourth form of this family, inhabiting the Lake of Galilee. This species and the *Hemichromis* mentioned hereafter are the most common in the Lake.

**Chromis simonis*, Gthr. Lake of Galilee.

**C. andreæ*, Gthr. Lake of Galilee.

**Hemichromis sacra*, Gthr. Lake of Galilee.

Clarias macracanthus, Gthr. Lake of Galilee.

Cyprinodon mento, Heckel. Ramoth-Gilead.

C. cypris, Heckel. Jordan.

C. sophiæ, Heckel. Dead Sea, near the entrance of rivulets.

Barbus longiceps, Cuv. & Val. Lake of Galilee.

Labeobarbus canis†, Cuv. & Val. Lake of Galilee.

Scaphiodon capoëta†, Güldenst. Lake of Galilee, Jordan, streamlets by the Dead Sea, Nahr el Kelb, Wady el Kurn.

Acanthobrama, sp.?, young. This species has been found by Mr. Beddome; but no example is in Mr. Tristram's collection.

Discognathus rufus, Heckel. Ramoth-Gilead.

Cobitis insignis, Heckel. Dead Sea, close to the entrance of rivulets.

**C. galilæa*, Gthr. Lake of Galilee.

? *Anguilla microptera*, Kaup. Three half-grown specimens from Nahr el Kelb best agree with the Eel called *A. microptera* by Kaup; but it appears to me very doubtful whether the numerous species distinguished by that gentleman will stand the test of a critical revi-

---

lected on the shores of the Dead Sea, there is one example of both these species which is provided with numerous tubercles. These tubercles are minute in the Frog, spine-like and very large and prominent in the Toad. Other specimens collected at the same localities are smooth, or provided with flat tubercles only.

† Specimens of these species have also been collected by Mr. T. W. Beddome.

sion; and it is not improbable that the Eel of the Jordan will prove to be of the same species as that of the Nile.

Descriptions of the New Species.

ZOOTOCA TRISTRAMI.

Dorsal scales distinctly imbricate, smooth, those along the vertebral line half as large as the loreal shield; ventral shields in nine longitudinal and in twenty-eight transverse series. Collar rather indistinct, and not continued across the middle of the chest. Gular scales between the chin-fold and the collar large; those between the chin-fold and the chin very small. Temple with granular scales; an oblong shield along the outer margin of the occipital. Vertical cuneiform, tapering behind. Upper parts brownish red, with irregular black and white markings, arranged in cross bands on the sides, and not continued across the vertebral line.

Length of body $2\frac{1}{2}$ inches.

Lebanon.

SEPS MONODACTYLUS.

Limbs extremely small, not divided into toes: the anterior scarcely half as long as the snout; the posterior as long as a scale. The middle of the trunk surrounded by twenty scales. Uniform olive-green above, whitish below. Otherwise similar to *S. tridactylus*.

Galilee, Merom, Mount Hermon.

RHYNCHOCALAMUS (g. n. *Calamaridarum*).

Body rather elongate, cylindrical; head small, not distinct from neck; tail of moderate length. Rostral shield enlarged, without longitudinal keel, far produced backwards between the anterior frontals; two pairs of frontal shields; one nasal. Scales smooth, in fifteen rows; subcaudals in two rows. Maxillary teeth few in number, comparatively strong, subequal in size; the posterior broad at the base, with an impression, but without longitudinal groove; palatine teeth none.

RHYNCHOCALAMUS MELANOCEPHALUS.

Head small, depressed, triangular, the snout being somewhat pointed. Eye small, with round pupil. Frontal shields of moderate size, the posterior not twice as large as the anterior; vertical six-sided, with a very obtuse angle in front, and with a pointed one behind, rather longer than broad; occipitals not much longer than vertical, rounded behind. Nasal oblong; loreal squarish, one ante- and one post-ocular. Six upper labials, the third and fourth entering the orbit, and the sixth being the largest. Temporals $1+1$. There are two pairs of chin-shields; but the posterior are small, almost scale-like, only half the size of the anterior, and separated from each other by a scale; there are three pairs of lower labials, in contact with the anterior chin-shields. Scales with a single minute apical groove. Ventrals 218; anal bifid; subcaudals 54. Upper

parts reddish olive, lower ones white; upper surface of the head, rostral shield, and nape of the neck black; upper lip white, a white line running across the rostral shield.

Length of head $\frac{1}{3}$ inch, of trunk 14 inches, of tail 3 inches.

Merom.

Chromis simonis.

D. $\frac{15}{10}$. A. $\frac{3}{9}$. L. lat. 31.

The height of the body is contained twice and a half in the total length (without caudal); the length of the head twice and three-quarters. Snout rather obtuse, *with the lower jaw slightly projecting beyond the upper*; the maxillary extends to below the middle of the præorbital, which is as wide as the orbit. Teeth small: there are about thirty-seven on each side, of the outer series, in the upper jaw. The eye is situated nearer to the end of the snout than to that of the operculum; there are three series of scales on the cheek, and the naked portion of the præoperculum is much narrower than the orbit.

The dorsal fin commences before the root of the pectoral; its spines are of moderate strength, gradually increasing in length behind, the length of the last being two-fifths of that of the head; the soft dorsal extends to, or somewhat beyond, the base of the caudal; the third anal spine as long as the thirteenth of the dorsal fin. Caudal fin slightly rounded. Pectoral fin extending somewhat beyond the origin of the anal; ventral not reaching the vent.

There are three and a half longitudinal series of scales between the origin of the dorsal fin and the lateral line; extremity of the operculum scaleless; scales on the belly very small. Coloration uniform.

Only two specimens were procured from the Lake of Galilee; they are 7 inches long.

Chromis andreæ.

D. $\frac{15}{12}$. A. $\frac{3}{10}$. Lin. lat. 31.

The height of the body is contained twice and a half or twice and two-thirds in the total length (without caudal); the length of the head rather more than thrice. Head not much longer than high; snout rather obtuse, with the jaws equal in length anteriorly, or with the upper slightly projecting beyond the lower. Teeth small, there being from twenty to twenty-three on each side, of the outer series, in the upper jaw; maxillary extending to below the middle of the præorbital, which is as wide as the orbit. Eye situated in the middle of the length of the head; there are three series of scales on the cheek, and the naked limb of the præoperculum is much narrower than the orbit; extremity of the operculum naked.

The dorsal fin commences vertically above the root of the pectoral; its spines are of moderate strength, gradually increasing in length behind, the last being half as long as the head. The soft dorsal is produced into a point, which extends nearly to the middle of the caudal fin. Anal spines stout, the third being as long as, but

much stronger than, the twelfth of the dorsal fin. Caudal fin truncated, scaleless, not much shorter than the head. The pectoral does not quite extend to the origin of the anal; the ventral reaches the vent.

There are three and a half longitudinal series of scales between the origin of the dorsal fin and the lateral line. Scales in the thoracic region very small, much smaller than those on the belly. Body uniformly coloured; extremity of the operculum black; dorsal and caudal fins with numerous round whitish spots.

Three specimens were collected in the Lake of Galilee. The larger is $7\frac{1}{2}$ inches long; the two others 5 in.

Hemichromis sacra.

D. $\frac{14}{11}$. A. $\frac{3}{8}$. L. lat. 31.

The height of the body is contained twice and three-fourths in the total length (without caudal); the length of the head twice and a third. Head much longer than high, the snout being compressed and much produced; its extent is two-fifths of the length of the head; lower jaw very prominent; the maxillary extending to below the middle of the præorbital, which is much wider than the orbit. Teeth pectiniform, in a band; those of the outer series are somewhat larger than the others; but there are no anterior canine teeth. The eye occupies the middle of the length of the head, and is situated immediately below the upper profile. Scales on the cheek in four series; the naked portion of the præoperculum as wide as the orbit. The dorsal fin commences somewhat in front of the root of the pectoral; its spines are of moderate strength, gradually increasing in length behind, the length of the last being two-sevenths of that of the head; the soft portion extends to the root of the caudal when laid backwards; the third anal spine is the longest, as long as the twelfth of the dorsal fin. Caudal fin slightly rounded, more than half as long as the head, not scaly. The pectoral extends somewhat beyond the origin of the anal; ventral not reaching to the vent. Scales not serrated: there are four longitudinal series between the origin of the dorsal and the lateral line; those on the belly are very small. Extremity of the operculum naked. Greenish olive above, silvery on the sides and below; fins greyish; extremity of the operculum pearl-coloured; sometimes an oblong blackish spot on the middle of the side of the body.

This is a common species in the Lake of Galilee and in the Jordan. The specimens collected are from 7 to 9 inches long.

Cobitis galilæa.

D. 2/9. A. 2/6. Scaleless; caudal fin truncated. The length of the head is one-sixth of the total. The origin of the dorsal fin is somewhat nearer to the extremity of the snout than to the root of the caudal.

This species was discovered by Th. W. Beddome, Esq., who brought one specimen from the Lake of Galilee.